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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,071	07/23/2001	Mayumi Tomikawa	522.1921D2	2943

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EXAMINER

BORIN, MICHAEL L

ART UNIT PAPER NUMBER

1631

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/910,071

Applicant(s)

TOMIKAWA ET AL.

Examiner

Michael Borin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Amendment filed 07/06/2005 is acknowledged. Claims 24-26 are added. Claims 13-15, 24-26 are pending.

Rejections and/or objections not reiterated from previous Office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

The objection to specification is withdrawn in view of applicant's arguments.

Claim Rejections - 35 USC § 101

2. Claims 13-15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The rejection is applied for the reasons of record and further in view of the following.

Applicant argues that the invention relates to a method for extracting and evaluating mutually similar portions in one-dimensional sequences in molecules and/or three-dimensional structures of molecules. There is no mention of any molecules in the claims; the claims are directed merely to comparing spatial coordinates of two point sets.

Applicant cites section of p. 28-29 specification as providing description of a particular physical object. It is not clear what particular physical objects are addressed there, other than unidentified "substance expressed by a point set" .

Examiner maintains that the method of claims 13-15 is merely a mathematical manipulation of data which consist solely of mathematical operations without some claimed practical application and that a step of merely calculating distance between points does not render the process statutory.

3. Claims 13-15, 24-26 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility.

The rejection is applied for the reasons of record set forth for claims 13-15 and further in view of the following.

Applicant addresses Examiner's argument that the sets of three-dimensional coordinates are not limited to originate from two different structures, and states that "the selection of coinciding attributes narrows the field of structures". The point of this part of the utility rejection was that to the extent the claimed method is directed to comparing different parts of the same molecule, it is not clear what is the utility for comparing different parts of the same compound. Applicant's response that it "narrows the field of structures" is not deemed convincing. Further, subsequent discussion of knowledge in the art that molecules can be split by enzymes and smaller portions can be analyzed (p. 8, second paragraph) does not seem to be related to the issue being addressed in the rejection.

Further, with respect to the potential utility in comparing different molecules, applicant cites Background section of specification which states that a commonly existing sequence patterns is known to be found in proteins having the same function, and argues that the corresponding motif between an unknown and known proteins having the same function may be determined by the claimed methods. Examiner disagrees. There is no method steps addressing identifying common sequence patterns, the claimed method merely compares two point sets and, as stated in the rejection, merely elucidating how far apart elements of compounds are is not an indication that the compounds are, in fact, similar enough to identify the elements as comprising. Even where the claims encompass proteins, in the absence of any knowledge of identity, function, etc., of the proteins being compared, nor any determination of a degree of similarity between two proteins, the claims do not provide an "immediately useful" result.

Applicant points to Fig 1 as illustrating producing useful result. Fig. 1 is a block diagram for gene information survey apparatus, which is not an embodiment being instantly claimed.

4. Claims 13-15, 24-26 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific, substantial and credible asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 102.

5. Claims 13-15, 24-26 are rejected under 35 U.S.C. 102(b) as anticipated by US 4,853,871 or Holak et al. or Flaherty et al. or Mosimann et al. The rejection is applied for the reasons of record set forth for claims 13-15 and further in view of the following.

Applicant seems to argue that when attribute values of the two set points coincide, the rmsd is generated. The same, however, applies to the methods of the cited prior art teaching analyzing three-dimensional structures by generating correspondence between set points describing two three-dimensional structures and calculating root mean square distance (rmsd) between the corresponding elements.

Double Patenting

6. Claims 13-15, 24-26 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 16,17 of co-pending application 09/909809 or claims 5-11,24 of co-pending application 09/910054. The referenced claims of both applications are drawn to methods of analyzing three-dimensional structures including steps of dividing points, generating correspondences and calculating rmsd, as instantly claimed.

Applicant responds that the rejection is "premature". Note, that as was stated in the rejection, the rejection is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Borin whose telephone number is (571) 272-0713. The examiner can normally be reached on 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel, Ph.D., can be reached on (571) 272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Borin, Ph.D.
Primary Examiner
Art Unit 1631

mlb
09/14/2005